tion. In many individuals the hernia seems to have had no effect on the duration of life; one subject was seventy-four, several others over sixty years of age. At the other extreme cases have been seen in infants of two weeks and two months, respectively. It does not appear to have yet been found to be congenital, though Moynihan claims there is no reason why it could not be.

Three cases have been successfully operated on (those of Sonnenburg, Tubby, and Neumann).

Further information may be found in Jonnesco's work,[1] as well as the later and much less diffuse one of Moynihan, which has a good bibliography.

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SPLENIC ANÆMIA. A REPORT OF THREE CASES.

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DURING the past five years the medical journals of both England and America have contained several important articles upon the subject of splenic anæmia. Prominent among them are those of Sippey,[1] Osler,[2] A. H. Wentworth,[3] Samuel West,[4] J. S. Fowler,[5] and J. L. Morse.[13] The last four writers deal with the association of splenic enlargement and anæmia in infancy, and their observations have decidedly cleared the misty atmosphere that has hung around some of the diseases of childhood.

The American writers are in entire accord as to their main conclusions, based upon the observations of cited cases. A brief abstract of the conclusions arrived at follows:

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[1] Hernies Internes Retroperitoneales, Paris, 1890.

1. There is no relationship between the anæmia and the enlargement of the spleen, liver, and the lymph glands. Cases with identical lesions of the spleen show varying degrees of anæmia and leucocytosis (Wentworth and Morse).

2. The blood shows a constant tendency to revert to the fetal type; the morphology of the red cells varies with the degree of anæmia, and not with the condition of the liver and the spleen. Normoblasts and megaloblasts are frequently found, with but little anæmia (Morse).

3. The leucocytes are frequently increased in number (regarding 14,000 as the normal), and usually correspond to the degree of anæmia (Fowler).

Morse thinks there is no relation between the reduction in reds and the degree of leucocytosis; thus, he finds a low red count with leucopenia, and a high red count with a decided leucocytosis.

4. The hæmoglobin index is always reduced.

5. Splenic anæmia and von Jaksch's disease are to be regarded as secondary anæmias.

6. The enlargement of the spleen, liver, and the lymph glands is not due to the change in the blood, but are all the result of a common cause—disturbance in nutrition.

There are, therefore, some points of difference in the symptom-complex as manifested in infants and adults:

1. The infrequency of hemorrhages from the mucous membranes in the former; its comparative frequency, especially from the stomach, in the latter.

2. The tendency of the splenic tumor to disappear under treatment in the infant; its persistence or gradual enlargement in the adult.

3. The presence of a leucocytosis in infancy; a leucopenia or a normal leucocyte in the adult. (Rarely a leucocytosis. Case I.)

There have also been not a few cases reported occurring in adults and children. S. M. Hamill,[6] A. O. J. Kelly,[7] P. L. Daniel,[8] J. E. Talley,[9] N. E. Brill,[10] Bovaird,[11] Geo. Peacocke,[12] and A. L. Benedict,[13] have all published cases showing the different types of splenic enlargement associated with definite anæmia, so that we can more concisely define the disease under consideration. I can do no better than quote Dr. Osler's definition of anæmia splenica chronica as given in his article in THE AMERICAN JOURNAL OF THE MEDICAL SCIENCES:[2] "A chronic affection, probably an intoxication of unknown origin, characterized by progressive enlargement of the spleen, which cannot be correlated with any known cause, as malaria, leukæmia, syphilis, cirrhosis of the liver (primary splenomegaly); anæmia of a secondary or chlorotic type (leucopenia); a marked tendency to hemorrhage, especially from the stomach, and in many cases a terminal stage with cirrhosis of the liver, jaundice, and ascites (Banti's disease)."

With the firm belief that cases of obscure disease can best be studied from the statistical standpoint, I desire to add to those already reported, the following cases of splenic anæmia seen during the past several years.

CASE I.*—J. C. H., aged thirty years; by occupation a ship steward and cook; admitted to the Pennsylvania Hospital (No. 3260) on January 7, 1903, complaining of a leg ulcer on the lower inner side of left leg. His father was a Canadian, with some admixture of Indian blood; mother, Irish. He was born near Chester, Pa., where he lived until he was seventeen years old. During his boyhood he had frequent attacks of chills and fever. Since 1885 he thinks his skin has been yellowish in hue, sometimes being more deeply so than at present. During and after the malarial attack in December, 1885, it was noted that his spleen was much enlarged, and it has so remained ever since.

To better his health he shipped on coasting steamers as a cabin boy from 1890 to 1893, and finally took to sea going vessels in 1893, and has since remained upon them in the capacity of a ship steward. In October, 1894, he had scurvy, "his muscles becoming soft and flabby and the teeth loose," and at that time there first developed an ulcer upon the left leg, which was slow in healing, and which has several times broken down since then. From December 12, 1895, to April 14, 1896, he was a patient in the Pennsylvania Hospital under the care of Dr. J. M. Da Costa (*History*, 1773). The splenic measurements were then identical with its present size. The blood count was, then: erythrocytes, 2,048,000; leucocytes, 12,000; hæmoglobin, 34 per cent. During his four months' stay in the hospital the blood count was but little changed, excepting an increased leucocytosis (20,000). No differential count was then made. One hyaline body (malarial) was reported to have been found, though subsequent examination failed to show parasites. The condition of the heart and the urine was identical with the present state. Upon his discharge from the hospital, a diagnosis of "malaria and splenic leukæmia" was made.

He states that he has had typhoid fever three times; the first attack in July, 1888, in Philadelphia, duration of two months, and under the care of Dr. J. M. Anders. The second and third attacks occurred in February, 1891, and July, 1892, in the marine ward of the German Hospital, duration of two to three months each. Pneumonia he has had twice: double pneumonia in the Bellevue Hospital, New York, in November, 1896, very ill for six weeks; again in 1899, at the Presbyterian Hospital, New York, under the care of Dr. Walter James, in hospital four weeks. He states that he has had malarial attacks (chills, with fever and sweats), during which malarial organisms were found in his blood in 1898, 1899, and in November, 1902. It is doubtful if these attacks have really been malaria. He has never had hemorrhages from the nose, stomach, or bowels. He is not an alcoholic, and he denies all forms of venereal disease. The digestion is usually good, and bowels move daily.

Condition on Admission. He is a short, stocky man, with straight black hair and oval eyes, and a curious sallow skin with a distinct lemon tinge; in fact, he much resembles a Mongolian; there is no unusual pigmentation on the face or body. He has several carious teeth, but the mouth is otherwise in good condition. When he stands erect the abdomen is protuberant. The chest is well formed; the lungs are normal. Heart: Apex in fifth interspace, just under the nipple. The outline of cardiac dulness is the right border of sternum, the third interspace to the midclavicular line. There is a soft, blowing, systolic murmur at the apex, transmitted slightly to the left. A murmur of the same quality is present at both aortic and pulmonary cartilages, and the second sound of each accentuated, the aortic, however, more so than the pulmonary. The liver dulness begins in the midclavicular line at the seventh rib. Its sharp, thin edge can be felt in the right parasternal line, several fingers' breadth below the costal margin. Its surface is smooth, and as it disappears under the left costal margin it is in close proximity with the spleen. The spleen is exceedingly large, the upper border of dulness beginning in the seventh interspace in the midaxillary line. It extends downward and forward, crossing the median line above the umbilicus, its tip reaching to a point midway between the umbilicus and the right iliac crest. The lower edge curves away and downward, and lies within a finger's breadth of Poupart's ligament on the left, and almost rests upon the left anterior spine of the ilium. (See Fig. 1.) Its surface is hard and not nodular. The notch is felt on the anterior edge above the umbilicus; just above this point a small, soft nodule can be felt which seems to be attached to the abdominal wall. After some manipulation it can be displaced. It is probably a small ventral hernia filled with omentum. There is no ascites, no œdema of the legs; there is marked pigmentation on the right shin, which is of brown color. The leg ulcer is superficial with slightly raised edges, with bluish discoloration; the granulations are pale and sluggish. The urine is 1008, light in color, acid; contains a

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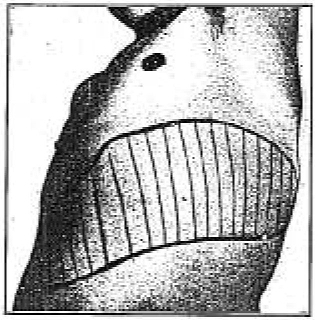
* This case was shown before the Medical Section, College of Physicians of Philadelphia, March 9, 1903.

FIG. 1.



Chronic splenic anæmia. The outline represents the area of the spleen.

trace of albumin, no sugar; on microscopic examination a large quantity of uric acid with a few hyaline casts were found.

His blood was counted at intervals of every two weeks during his stay in the hospital. The first count was: erythrocytes, 2,440,000; leucocytes, 9050; Hb, 60 per cent. A differential count showed polynuclear, 54.4 per cent.; small lymphocytes, 36 per cent.; large lymphocytes, 1.6 per cent.; transitionals, 3.6 per cent.; eosinophiles, 4.4 per cent. Six normoblasts were found in counting 250 leucocytes. No malarial organisms were present on admission, or at any time subsequently. During his stay in the hospital the blood condition improved slightly, the erythrocytes rising to 3,208,000; the hæmoglobin to 58; leucocytes, 15,475; numerous normoblasts were found, and one megaloblast just before his discharge.

During February his vision, which was poor on admission, failed rapidly because of increasing opacity of the lens of the right eye, while the left eye also showed a beginning cataract. The examination of the fundus, made by Dr. George C. Harlan, showed no hemorrhages and was reported as normal. The temperature during his stay in the hospital was mainly subnormal, except upon two days, upon one occasion rising to 100.2° F. The leg ulcer, upon his discharge, March 31st, was almost healed, his main complaint being the loss of his eyesight, due to cataract formation. There was no evidence of hemorrhage from any mucous membranes during his stay in the hospital.

CASE II.—Rosie N., aged thirteen years; a school-girl; hospital No. 3079; admitted to Pennsylvania Hospital on December 23, 1902. Her parents are living, and the child has been in the United States but one month. She has been sick for two months, diagnosed as æstivo-autumnal malaria and treated with the hypodermic injection of quinine, without results. Her symptoms were headache, cough, and pain in the left side of abdomen. No fever present. It was stated that she passed blood from the bowel one week before admission.

On Admission. A well nourished girl, with pallid mucous membranes; moist, slightly coated tongue; the axillary, postcervical, and inguinal glands are slightly enlarged. The lungs are healthy, and the heart is normal in size, and the sounds clear. The liver is normal in outline, while the spleen is much enlarged (see Fig. 2), extending beneath the costal margin in the midclavicular line, and the tip reaches just below the umbilical level; the posterior border disappears beneath the costal cartilages in the midaxillary line. The surface is smooth and firm, edge sharp, and the organ freely movable. The extremities are normal. No unusual pigmentation.

The Blood. Erythrocytes, 31,120,005; leucocytes, 3600; Hb, 55 per cent. A differential count results as follows: polynuclear, 58.4 per cent.; small lymphocytes, 26.8 per cent.; large lymphocytes, 6.8 per cent.; transitional forms, 6 per cent.; and eosinophiles, 2 per cent.

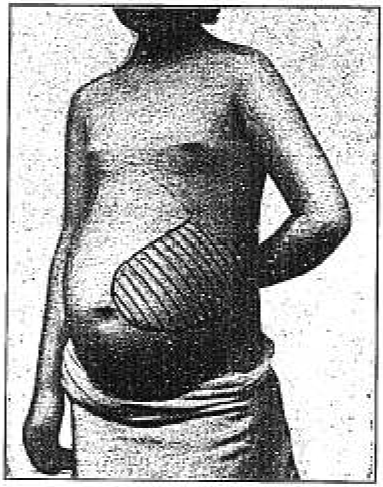
During her stay she passed a round worm and some undigested curds in the stools, while the temperature was irregular for two or three days. There were no hemorrhages from any source. There was decided improvement under increasing doses of Fowler's solution. The spleen was unchanged in size on her discharge, on January 24, 1903.

CASE III.—Charles L., aged thirty-two years; an Italian laborer; admitted to the Pennsylvania Hospital October, 1890; hospital No.

1954. He has been in America for two years. When fifteen years old had a malarial fever, and at twenty-two a continued fever for several weeks; these have been the only sicknesses. He complains of palpitation of the heart for five months, with some pain over the pubis and about the lower part of chest, and some loss in weight. He never had hemorrhage from any source, and no diarrhœa; denies venereal disease.

On Admission. A large-framed, muscular Italian, with sallow skin and pale mucous membranes; the first molars and bicuspids in lower jaw are carious. The inguinal and axillary glands are decidedly and the postcervical slightly enlarged. The chest is broad and deep, with normal breath sounds; the heart is slightly increased in its lateral diameter (11 cm.), with soft systolic murmur at the apex and both aortic and pulmonary areas (hæmic murmur). The liver normal in size, while the spleen is very much enlarged, the dulness beginning in midaxilla at seventh rib, and emerging beneath the costal cartilages in the midclavicular line, extends to the level of the umbilicus; it is hard and the notch can be felt. There is no œdema of the legs, and no pigmentation of the skin. An anæmia of chlorotic type is present; the erythrocytes are reduced to 2,084,000; the leucocytes, 4900; and

FIG. 2.



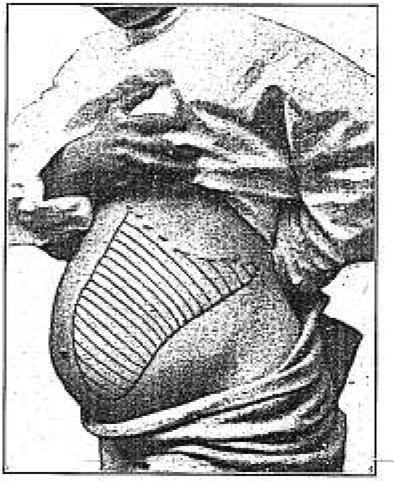
Splenic anæmia. Duration of anæmia short. Outline shows the size of spleen below the costal margin.

the Hb is 15 per cent. He remained in the wards until November 30th; during this interval the blood was counted six times, the results showing a rise in the erythrocytes to 3,360,000, and the Hb to 35 per cent.; leucocytes, 4400. No nucleated reds were found; the differential count normal; slight poikilocytosis. The temperature was usually subnormal, though on one occasion it rose to 100° F., and at irregular inervals was 99° F. in the evening. The bowels were normal. The treatment consisted in the administration of Blaud's mass, 5 to 15 grains t. i. d., and increasing doses of Fowler's solution. At no time were malarial organisms found, and no definite cause for the anæmia discovered. The spleen remained unchanged in size on his discharge.

The following case illustrates another aspect of splenic enlargement, and perhaps should be classified under the splenic anæmias, though the blood symptoms are wanting.

Case IV.—Varione F., aged thirty-five years; housewife; born in Italy. Previous health fairly good; has one child, aged eight years. Scanty, but regular menstruation. For two years she has had slight pain in the abdomen, and noted its gradual enlargement. Occasionally

Fig. 3.



Primary splenomegaly. Enormous spleen, with no anæmia. Outline shows the splenic area.

she has chilly sensations, followed by fever; admitted to Pennsylvania Hospital January 8, 1903; hospital No. 3266.

On Admission. A well-nourished, healthy-looking woman, with clean, moist tongue; no evidence of anæmia; the lungs and heart are normal; the lymphatics are not enlarged. The liver is of normal size, while the spleen is unusually large (see Fig. 3), extending to the median line, and as far as the iliac crest. It is smooth, firm, and slightly tender along the anterior edge; its transverse diameter below the costal margin is 16 cm. No œdema of extremities. No ascites. Menstruating at present, and has temperature of 99.4° F.

The Blood. Erythrocytes, 4,656,000; leucocytes, 4650; Hb, 80 per cent.; the differential count is practically normal; polynuclear, 75 per cent.; small lymphocytes, 11.66 per cent.; large lymphocytes, 8.33 per cent.; transitional forms, 3.33 per cent.; and eosinophiles, 1.66 per cent. The urine is 1018, and contains neither albumin nor sugar. A week later the red cells had risen to 51,440,005 and the Hb to 97 per cent. On account of the unusual motility of the spleen, I had a tight abdominal band applied, and we were not able to keep her in the ward after January 24th. In this case the splenic dulness began low—at the ninth rib—so that it is probable that the enlarged spleen was ptosed decidedly; the ability to move it about readily is also in favor of this view. I attributed her symptoms to the weight and mobility of the spleen, and, in the absence of any anæmia, considered the enlargement in part due to a kinking of the splenic vessels; this is the second case of such unusual enlargement of the spleen without anæmia I have seen in Italian women; in both cases the spleen was mistaken for a pelvic growth by the attending physicians and sent to hospital for operation. In one the actual diagnosis was not made until exploration of the abdomen showed the tip of the enormously enlarged spleen to be adherent to the left tube and ovary. The pathology of the specimen was a hyperplasia of the stroma; the splenic vein was swollen the size of the placental cord and much resembled it in appearance.

TREATMENT. Results of medicinal treatment in splenic anæmia have not been satisfactory; measures to improve the anæmia, the administration of iron and arsenic, with plenty of digestible nourishment and fresh air, are indicated. In some cases, especially in children, rapid improvement in the blood follows. In adults the enlargement of the spleen usually persists, and its size alone is a cause of considerable discomfort.

This has led to surgical interference and the removal of the spleen.

Harris and Herzog[14] have reported nineteen cases of splenectomy in splenic anæmia, with fourteen recoveries. I have collected since their report six additional cases, with four recoveries (Warren,[15] Peacocke,[13] Blanquique,[16] J. P. Bispham,[17] Cushing and Halstead.)[2] The fatal result is usually due to hemorrhage.

REMARKS. None of the foregoing cases can be said to be typical, for, though all of them present a chlorotic anæmia and an enlarged spleen, in but one of them has hemorrhage from the mucous membranes occurred (Case II.), and that before admission to hospital.

In two of the cases (II. and III.) the superficial lymphatics were somewhat enlarged, though in neither of them were there other signs of syphilis. In all the cases, including the last, malaria can be regarded as one of the factors in the splenic enlargement; three of the four cases are Italians, in whom splenic enlargement is an extremely common physical sign; three of them have distinct histories of so called malarial attacks. All the cases show a marked tendency toward chronicity, Case I. certainly having a history of at least eighteen years' duration. The first three cases, no other cause having been discovered for the symptoms, are therefore diagnosed as splenic anæmia.

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SPONDYLITIS DEFORMANS.

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IT has been my good fortune to have seen a number of cases of spondylitis deformans both here in America and in the hospitals abroad. I am convinced that the disease is more common than the text-books would have us believe, and that many cases are not diagnosed, through the fact that the physician has either no knowledge of the affection, or else only a very vague idea of what it is. For the purpose of calling attention to the disease, I report a case which came under my care last summer:

Clinical History. Patient is a white female, aged twenty-two years.

Family History. Father, mother, and two brothers living and healthy. One brother died in infancy. There is no history of any special diseases in her ancestors.